Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-7. (Cancelled)

8. (new) A method for controlling injection rate and injection pressure of a liquid fuel injector having a nozzle assembly and an injector plunger in an injector cylinder for developing nozzle assembly injection pressure, a pressure balanced control valve assembly including a valve body with a valve bore defining a valve seat, a movable valve element in the valve bore with a valve head on the movable valve element, the valve head and the valve seat defining a liquid fuel flow opening, the movable valve element communicating with a pressure regulated nozzle passage whereby the valve element is subject to injection pressure developed by the fuel injector plunger when it is stroked during an injection event, the valve seat and the valve head defining in part a fluid pressure spill passage communicating with the pressure regulated nozzle passage, the spill passage communicating with a fluid supply passage whereby the injector cylinder is supplied with liquid fuel when the fuel injection plunger is retracted, a solenoid actuator for the movable valve element, the valve seat and the valve head being normally open with the solenoid de-energized, and a spring acting on the valve element to oppose a solenoid actuator force; the method comprising the steps of:

providing a first level of regulated current to the solenoid actuator to activate the movable valve element causing the valve head to move toward the valve seat to a first pressure regulating position defining a reduced liquid fuel flow opening whereby the spill flow passage has a first degree of fuel flow restriction thereby allowing regulated injection pressure in the nozzle assembly to rise and creating an initial liquid fuel injection pulse in an initial injection rate-controlled fuel injection period;

providing a second reduced level of regulated current to the solenoid actuator for a preselected time following the initial liquid fuel injection pulse during an injection event to move the valve head away from the valve seat to a second pressure regulating position and to define an increased liquid fuel flow opening thereby creating a reduced initial injection pressure during the initial injection rate-controlled period; and

providing a third level of regulated current at a value to cause the valve head to move toward the valve seat to a third pressure regulating position to define a decreased liquid fuel flow opening thereby creating a high third injection pressure regulating position that allows regulated injection pressure in the nozzle assembly to rise further during a main injector rate-controlled fuel injection period and to create a peak injection pressure pulse near the end of the injection event.

9. (new) The method set forth in claim 8 wherein the step of providing a third level of regulated current includes the step of maintaining the third level of regulated current during the main injection rate-controlled fuel injection period, thereby maintaining the peak injection pressure pulse for a precalibrated time near the end of the injection event.

10. (new) The method set forth in claim 9 wherein the step of providing the third level of regulated current is followed by the step of controlling depressurization of the nozzle assembly at the end of the main injection rate-controlled period.

11. (new) The method set forth in claim 10 wherein the step of providing the third level of regulated current is preceded by a step of increasing the regulated pressure at a controlled rate following the initial injection rate-controlled period.

12. (new) The method set forth in claim 10 wherein the step of controlling depressurization of the nozzle assembly comprises the steps of reducing the level of current to a first lower depressurization control level following the step of providing the third level of regulated current and reducing the level of current further to a second lower depressurization control level thereby terminating the injection event.

13. (new) The method set forth in claim 11 wherein the step of controlling depressurization of the nozzle assembly comprises the steps of reducing the level of current to a first lower depressurization control level following the step of providing the third level of regulated current and reducing the level of current further to a second lower depressurization control level thereby terminating the injection event.

14. (new) A method for controlling injection rate and injection pressure of a liquid fuel injector having a nozzle assembly and an injector plunger in an injector cylinder for developing nozzle assembly injection pressure when it is stroked, a pressure-balanced control valve including a solenoid actuator and a valve element subject to pressures developed by the injector plunger, the valve element being actuated by the solenoid to apply a force on the valve element for metering fuel flow to the injector nozzle assembly, a valve spring acting on the valve element and opposing a solenoid actuator force, the valve element having a valve head surrounded by a valve seat and defining with the valve seat a fuel flow spill passage, the valve element controlling the injection pressure between an initial pressure and a maximum pressure, the method including the steps of:

providing a first level of current to the solenoid actuator for moving the valve element from a normally open position toward a closed position to a first pressure regulating position allowing injection pressure to rise in an initial rate-controlled period;

providing a reduced level of current to the solenoid actuator following the initial rate-controlled period to reduce the force on the valve element and to move the valve head away from the valve seat, thereby regulating the pressure to reduce the rate of injection of the fuel as the valve element assumes a second pressure regulating position;

providing an increased level of current to the solenoid actuator following the initial rate-controlled period for moving the valve element toward its closed position to a third fuel pressure regulating position to effect increased pressure regulation and a peak injection pressure value during a peak injection rate-controlled period;

providing a further reduced level of current to the solenoid actuator following the peak injection rate-controlled period to move the valve element under spring force to a depressurization position; and

ending solenoid actuator current delivery thereby moving the valve away from the valve seat to its fully open position at the end of an injection event.